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RESULTS OF THE ARCHBOLD EXPEDITIONS. NO. 2

TWELVE APPARENTLY NEW FORMS OF *RATTUS* FROM THE INDO-AUSTRALIAN REGION

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The following provisional descriptions of new forms are abstracted from a nearly completed report upon the rats of the region mentioned. The generic and group relationships assigned to species are stated arbitrarily, without presentation of the supporting evidence which will be set out fully in the principal report.

The collection containing the new species on deposit with The American Museum of Natural History comprises material assembled by (1) Archbold New Guinea Expedition; (2) Whitney South Sea Expedition; (3) collections made by Shaw Meyer, obtained by Mr. Archbold through the generosity of Dr. L. C. Sanford; (4) specimens collected by G. Heinrich in Celebes, purchased by Mr. Archbold; (5) specimens collected by G. Heinrich in Celebes, received by Mr. Archbold from Buitensorg Museum; (6) collection by J. J. Menden in Java, purchased by Mr. Archbold; and (7) collection by J. J. Menden in Sumatra, purchased by Mr. Archbold.

We wish to acknowledge our indebtedness to Dr. H. E. Anthony, American Museum of Natural History: Mr. G. S. Miller, Jr., U. S. National Museum: and Dr. W. H. Osgood, Field Museum of Natural History, for much kindly given advice and for allowing us access to the collections in their charge.

Measurements[1] are stated throughout in millimeters, altitudes in meters, and colors in terms of Ridgway.[2]

Rattus rattus palembang, new subspecies

TYPE.—No. 102587, Amer. Mus. Nat. Hist.; ♀, adult; Morcarah Doewa, Palembang, south Sumatra; June 3, 1934; collector, J. J. Menden. The type is a skin and skull in fair condition.

GENERAL CHARACTERS.—The south Sumatran representative of the *diardii-neglectus* subgroup of the *rattus* group.

[1]Hind foot dimensions are without claws. In each case the field measurement given on the labels for hind foot has been rechecked.

[2]1912, 'Color Standards and Nomenclature.'

DESCRIPTION.—Color of type essentially like normal *diardii* but much warmer, approaching a warm shade of russet or hazel, especially on the shoulders and neck. Ventrally the gray-based hairs tipped with a shade between pinkish cinnamon and pinkish buff. Line of demarcation along sides imperceptible. Ears light fuscous; hands and feet with their sides buff but their dorsal surfaces gray, which color is continued on to the digits. The gray of the feet narrowed proximally by encroachment of the lateral buff color. Tail fuscous, not paler beneath.

The skull of the type differs from that of *diardii* in its slightly more massive rostrum, slightly shorter palatal foramina, narrower interparietal. Also it differs in possessing bullae with narrower inflated portion and more massive meatal portion, and in having m^1 slightly larger and wider than that of *diardii*.

MEASUREMENTS OF TYPE.—Head and body, 173 mm.; tail, 203; hind foot, 35; skull, occipitonasal length, 40.0; zygomatic breadth, 19.7; nasals, 14.0; interorbital breadth, 6.0; diastema, 11.1; palatilar length, 19.8; palatal foramina, 7.0; length bulla, 7.1; length molar crowns, 7.1; length crown m^1, 3.2; width crown m^1, 2.0.

Like *diardii*, *palembang* is somewhat variable in regard to the color of its pelage. Our series includes two individuals whose dorsal and ventral colors are somewhat less vivid than those just described for the type. The mammary formula is that for the *diardii* rats: namely, 2–3 (visible on all 9 of the females).

The race is based upon our series of 4 males and 9 females, all topotypes.

Rattus lalolis, new species

TYPE.—No. 101024, Amer. Mus. Nat. Hist.; ♀, adult; Lalolis, 30 miles southeast of Mengkoka Mts., southeast Celebes, 300 meters; December 6, 1931; collector, G. Heinrich. The type is a skin in good condition and skull with sphenoidal region broken.

GENERAL CHARACTERS.—A large, thinly haired rat with cranial characters intermediate between the *hoffmanni* and *rattus* groups. Mammary formula (on 3 females, including type) 2–3. Under parts whitish in color.

DESCRIPTION.—Pelage rather thin and coarse, of mixed blackish and ochraceous tawny, the latter hairs having whitish-gray bases. Under parts buffy white, self-colored. Transition from dorsal to ventral colors gradual. Hairs on hands and feet whitish, metacarpal and metatarsal fuscous marks visible. Tail light fuscous above and below; ears small, fuscous.

Skull strongly built, with rather longer rostrum than usual for the *hoffmanni* rats; zygomatic plate well-angled; palatal openings long, pointed in front; bullae large (115 per cent of tooth row in adult type, only 100 per cent in younger specimens); teeth nearly as heavy as those of *hoffmanni*.

MEASUREMENTS OF TYPE.—Head and body, 152 mm.; tail, 215; hind foot, 40; skull, occipitonasal length, 46.5; zygomatic breadth, 21.6; nasals, 6.8×4.5; interorbital breadth, 6.1; diastema, 13; palatal foramina, 8.8; length bulla, 8.3; length molar crowns, 7.2; length crown m^1, 3.2; width crown m^1, 2.1.

The species is based upon the type from Lalolis only. But we refer five other rather young specimens (3 males, 2 females), all from Lambasang, Mt. Lampobatang, 1100 meters, to the species.

Rattus lalolis appears to be most nearly related to *hoffmanni mengkoka*. It differs from it in possessing 2–3 mammary formula; white instead of gray-based ventral hairs; and a wider hind foot (width at base of 5th metatarsal / length of foot (s. u.) equal to 15 per cent in *lalolis*, 13–14 per cent in *mengkoka*).

Rattus hoffmanni mengkoka, new subspecies

TYPE.—No. 101062, Amer. Mus. Nat. Hist.; ♂, adult; Wawo, Mengkoka Mts., southeast Celebes, 50 meters; January 24, 1932; collector, G. Heinrich. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—The southeastern representative of *hoffmanni*, apparently extending from sea level to as high as 1500 meters on the Mengkoka Mts. Pelage of specimens from 1500 meters scarcely longer or softer than that of the type; their body size slightly less.

DESCRIPTION.—Pelage rather long, harsh and thin, the hairs as with most members of the group, fuscous, tipped with ochraceous tawny; under parts grayish white, i.e., bases gray, tips dirty white. Fine hairs of hands and feet dirty white. Tail entirely fuscous.

Skull closely approximating the measurements and drawing of *celebensis* Hoffmann,[1] but differing in possessing a narrower zygomatic plate and rather shorter tooth row.

MEASUREMENTS OF TYPE.—Head and body, 186 mm.; tail, 138; hind foot, 37.0; occipitonasal length, 44.0; back of interparietals to tip of nasals (for comparison with *h. hoffmanni*), 43.5; zygomatic breadth, 22.3; nasals, 17.0; interorbital breadth, 6.2; zygomatic plate, 5.9; diastema, 11.3; palatilar length, 21.5; palatal foramina, 8.0; length bulla, 7.3; length molar crowns, 8.0; length crown m^1, 3.8; width crown m^1, 2.4.

From higher up the Mengkoka Mountains we have the following material, also referred to the present race of *hoffmanni:* Masumbo, 550 meters, 4 males, 1 female; Tanka Salocco, 1500 meters, 1 adult male, 1 juvenal male, 2 juvenal females.

We have compared *R. h. mengkoka* with true *R. h. hoffmanni*. It remains to check it against *R. h. subditivus* of middle Celebes. That animal was described as quite large (hind foot 45 against 37 in *mengkoka*) which in our opinion sufficiently sets it off.

The single female of the series has the mammary formula 1–3=8.

[1] 1887, Abh. Mus. Dresden, I, No. 3, p. 18 ("*M. r. celebensis*").

Rattus mollicomulus, new species

TYPE.—No. 101134, Amer. Mus. Nat. Hist.; ♀, adult; Wawa Karaing, Mt. Lampobatang, southern Celebes, 1500 meters; September 13, 1931; collector, G. Heinrich. The type is a skin in good condition and skull with brain case broken.

GENERAL CHARACTERS.—A member of the *hoffmanni* group but of quite small size, the long soft pelage indicating that it inhabits the highlands.

DESCRIPTION.—Color of the tips of the dorsal hairs of the type ochraceous tawny, paling on sides, their basal parts fuscous which shows through the tawny; ventral hairs dull white, their bases gray, a faint touch of cinnamon buff on chest; line of transition indistinct. Tail wholly fuscous. Hands and feet rather slender, the backs of the hands with a grayish shade; tops of the feet clad with whitish hairs. Ears fuscous, rather small.

Skull built after the general plan of the *hoffmanni* group, with arched upper profile, rather short muzzle, and broad molars. Zygomatic plate rather rounded along its anterior edge. Muzzle rather narrower than in some other species.

MEASUREMENTS OF TYPE.—Head and body, 153 mm.; tail, 146; hind foot, 32; zygomatic breadth, 19.0; nasals, 14.8; interorbital breadth, 5.5; zygomatic plate, 4.4; diastema, 10.9; palatilar length, 18.5; palatal foramina, 7.4; length bulla, 6.3; upper molar crowns, 6.6; length crown m^1, 2.9; width crown m^1, 2.1.

We base the species upon the type, together with another adult male and a juvenal (both topotypes). In addition we refer to the species Nos. 2597 and 2599 of the Buitensorg Museum (both adult males), which have slightly larger bullae.

This long-furred mountain form is to be compared only with *linduensis* and *mollicomus*. Both are larger rats. *Linduensis* is described as "smaller and darker" than *hoffmanni*.

The mammary formula is apparently 1–3 = 8.

Rattus brachyrhinus, new species

TYPE.—No. 104210, Amer. Mus. Nat. Hist.; ♂, adult; Baroka, near mouth of Angabunga (=St. Joseph's) River, Central Division, Papua; 30 meters; April 8, 1933; collectors, Archbold and Rand. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—A *norvegicus*-like *Rattus* (but smaller), member of the *tunneyi* group, with only slightly coarsened pelage mixed with a few long guard hairs. Skull known by its large bulla, narrow interorbital region, long narrow palatal foramina. (Also, in females, mammary formula 3–3 = 12.)

DESCRIPTION.—Pelage dorsally somewhat coarse and slightly crisp, the hairs basally fuscous with the terminal fourth clay color, a small proportion entirely fuscous, and a scattering of very long fuscous guard hairs. Ventrally the hair color between dark olive-buff and deep olive-buff, all hairs having gray bases. The region about chin and lips paler and whiter. Tail short, uniformly fuscous, the scales roughly squarish, the median scale-hairs about two scale lengths, the lateral ones, one and one-half scale lengths. Feet and hands pale clay color.

Skull characterized by its generally arched form, wide brain case and strongly narrowed interorbital region; proportionately (to *norvegicus*) narrowed, elongated

interparietal bone; short nasals, their anterior tips not exceeding the premaxillae; long, narrow, slitlike palatal openings which reach backward to a level with the back of the first lamina of m^1; narrowed interdental palate; narrowed interpterygoid fossa; large inflated bullae whose length exceeds both crown and alveolar lengths of the molar series; anterior part of zygomatic plate thrown well forward and clearly visible from above. The molars are *Rattus*-like.

MEASUREMENTS OF TYPE.—Head and body, 187 mm.; tail, 141; hind foot, 31.0; skull, occipitonasal length, 39.3; basal length, 36.0; zygomatic breadth, 20.0; interorbital breadth, 4.9; nasals, 14.2×4.7; breadth brain case, 14.9; zygomatic plate, 4.1; diastema, 10.9; palatilar length, 18.4; palatal foramina, 7.9; length bulla, 8.2; upper molar crowns, 6.8.

Brachyrhinus is founded on the type and a series of six other males and one female from Baroka; also a complete skeleton (A.M. No. 104373, ♂). The paratypes all bear the slightly yellowish ventral color that has been described above as olive buff.

A series of 3 males and 2 females of the same species from the Loloki River, 20 miles east of Port Moresby, differs slightly in that the dorsal pelage is rather finer and darker and the ventral pelage is whiter, though also entirely gray-based.

A third set of rats of the same species, 14 males and 6 females, was taken at the Oriomo River, near the mouth of the Fly River. These closely match the type series in dorsal color, though ventrally, like the set from Loloki River, they are slightly paler. The texture of their fur is like true *brachyrhinus*.

This species of rats is so distinct from the *ringens*, *rattus*, and *norvegicus* types and yet appears to be so abundant that one wonders how it can have remained undescribed. Indeed, it may yet turn out to be identical with *ratticolor* or still more probably with some species of Queensland, north Australia.

The mammary formula 3–3 = 12 is interesting and rare. It occurs in *norvegicus*, *jalorensis*, *dammermanni*, and *pesticulus*, but not in true *rattus* so far as we have observed. The full number of mammae can be noted in a number of the females.

It can be inferred from the character of the three localities where Archbold trapped it that the species is an inhabitant of the drier coastal lowlands, probably of wide distribution where suitable habitats occur. The altitudes of the three localities are 30 meters (Baroka), 450–600 meters (Loloki), and 50 meters (Oriomo).

A specimen in the U. S. National Museum from north Queensland is the only member of the *tunnneyi* group in Australia that we know of with gray-based ventral pelage. It is larger than *brachyrhinus*.

Rattus penitus inferior, new subspecies

TYPE.—No. 101059, Amer. Mus. Nat. Hist.; ♂, adult; Wawo, Mengkoka Mts., southeastern Celebes, 50 meters; January 23, 1932; collector, G. Heinrich. The type is a skin and skull in fair condition.

GENERAL CHARACTERS.—A large member of the *chrysocomus* group with coarser pelage than either *penitus penitus* or *penitus sericatus*. Under parts irregularly suffused with hazel. Skull massive for the group, with long, broad palatal foramina.

DESCRIPTION.—Pelage of type with guard hairs distinct, though not longer than wool hairs; color of tips of hairs dull fawn color, the gray bases showing through and dulling the total effect. Under parts with fur mostly gray-based, tips whitish on throat, a little on sides and inside of limbs, otherwise tips hazel. Line of demarcation not sharp. Tail white beneath, not white-tipped.

Skull of type with large muzzle and sloping zygomatic plate. Length of palatal foramina exceeding length of molar crowns (118 per cent), which in turn exceeds length of bulla (110 per cent). The molar series, though short, is made up of rather heavy individual teeth (width of m^1 is 62 per cent of its length).

MEASUREMENTS OF TYPE.—Head and body, 177 mm.; tail, 170; hind foot, 40.5; skull, occipitonasal length, 45.3; zygomatic breadth, 20.5; nasals, 18.8; interorbital breadth, 6.6; breadth brain case, 16.8; diastema, 12.2; palatilar length, 20.8; palatal foramina, 9.3; length bulla, 6.9; length molar crowns, 7.8; length crown m^1, 4.0; width crown m^1, 2.5.

This new race is based upon three adult males besides the type, the youngest of which shows the ventral suffusion of hazel only in slight degree. To the same race we have referred three males and two females from Masumbo, 550 meters, on the same range of mountains.

Rattus penitus heinrichi, new subspecies

TYPE.—No. 101006, Amer. Mus. Nat. Hist.; ♂, adult; Lambasang, Mt. Lampobatang, southern Celebes, 1100 meters; August 31, 1931; collector, G. Heinrich. The type is a skin in good condition, but the skull somewhat broken by the trap.

GENERAL CHARACTERS.—A medium-sized member of the *chrysocomus* group with dense though rather crisp pelage.

DESCRIPTION.—Pelage of type coarser than that of *R. p. penitus* or *R. p. sericatus*, and much denser than *R. p. inferior*. Color above, rather strong sayal brown at tips of hairs, giving a general effect of natal brown due to dark-colored hair bases showing through from below. Under parts long-haired, the hairs between pinkish buff and cream buff, with gray bases. Hands and feet thinly clothed with whitish hairs. Tail whitish beneath, the scale-hairs about one and one-half scale lengths.

Skull of type more delicately formed than that of *p. inferior*, with narrower rostrum (? constant), smaller palatal foramina, shorter bullae, narrower mesopterygoid fossa.

MEASUREMENTS OF TYPE.—Head and body, 162 mm.; tail, 136; hind foot, 35.0; skull, occipitonasal length, 40.0; zygomatic breadth, 19.9; nasals, 15.5; interorbital breadth, 6.3; breadth brain case, 16.4; diastema, 10.5; palatilar length, 18.3;

palatal foramina, 7.6; length bulla, 6.4; length molar crowns, 7.3; length crown m^1, 3.7; width crown m^1, 2.3.

R. p. heinrichi is founded on a topotypical series of thirteen males, six females and two rats of unascertained sex. A number of individuals are somewhat young.

It is a pleasure to name this fine variety for its collector, G. Heinrich.

Rattus brevimolaris, new species

TYPE.—No. 101055, Amer. Mus. Nat. Hist.; ♂, adult; Lalolis, 30 miles southeast of Mengkoka Mts., southeastern Celebes, 300 meters; February 15, 1932; collector, G. Heinrich. The type is a skin and skull in fair condition.

GENERAL CHARACTERS.—A rather small member of the *chrysocomus* group with somewhat thin pelage, possessing a skull with small palatal foramina, narrowly pointed anteriorly and quite small molars.

DESCRIPTION.—Pelage of type rather thin, thinner than that of *andrewsi*, approximating the condition in the larger sized *inferior*. Dorsal color, as in allied forms, near natal brown, but not uniformly so because of dulling effect of gray under-color. Ventral color dirty buff, becoming clay color on breast and russet just anterior to scrotum. No clear line of demarcation along sides. Feet dull grayish-white. Tail short, white beneath.

Skull small and delicate, the palatal foramina well pointed in front, only slightly exceeding length of tooth row (110 per cent); bulla large to medium (in type 7.0 mm., in another specimen, female, only 6.1 mm.). Molars quite small.

MEASUREMENTS OF TYPE.—Head and body, 157 mm.; tail, 138; hind foot, 34.0; skull, occipitonasal length, 39.6; zygomatic breadth, 19.0; nasals, 15.4; interorbital breadth, 6.5; breadth brain case, 16.0; diastema, 10.9; palatilar length, 17.7; palatal foramina, 6.8; length bulla, 7.0; length upper molar crowns, 6.2; length crown m^1, 2.9; width crown m^1, 1.9.

Besides the type, 3 males and 3 females, all topotypes have been studied. At first sight this species looks like *andrewsi*. The latter, however, has crown of m^1 at least 3.8×2.2. When the type of *chrysocomus* is restudied it may be found that our *brevimolaris* will fit in with it. Meanwhile, we consider the closests allies of *brevimolaris* to be *nigellus* and *rallus*.

Rattus salocco, new species

TYPE.—No. 101119, Amer. Mus. Nat. Hist.; ♀, adult; Tanka Salocco, Mengkoka Range, southeastern Celebes; 1500 meters; January 6, 1932; collector, G. Heinrich. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—A large *xanthurus* rat with buffy white under parts, proportionately short hind feet, a short-muzzled skull with large bullae, wide molars and narrow zygomatic plate.

DESCRIPTION.—Dorsal pelage of brown-tipped fuscous hairs with an admixture of long fuscous guard hairs as in *xanthurus* and *marmosurus*, though not so long. Ventral pelage self-colored, buffy white becoming strongly yellowish on under neck.

Transition from dorsal to ventral coloration indistinct. Ears small, about as in *xanthrurus*. Feet and hands with dark metatarsal mark, thinly white-haired, the fingers and toes white. Tail with distal two-thirds white, the hairs attaining about two scale-lengths, terminally four scale-lengths.

Mammae 2–2=8.

Skull with broad, heavy muzzle, rather narrow brain case, temporal ridges heavy, interparietal large (6×12.5). Incisors moderately heavy; molars broad and short; palatal foramina just level with anterior roots of m^1-m^1, 41 per cent of palatilar length; bullae very large, 124 per cent of length of molar crowns.

MEASUREMENTS OF TYPE.—Head and body, 211 mm.; tail, 265; hind foot 39.0; skull, occipitonasal length, 46.0; zygomatic breadth, 23.5; nasals, 16.7; interorbital breadth, 6.2; zygomatic plate, 4.3; diastema, 13.2; palatilar length, 22.0; palatal foramina, 9.0; length bulla, 9.5; length molar crowns, 7.7; length crown m^1, 3.5; width crown m^1, 2.5.

The present species is based upon the type and a paratype (♀). Both exhibit the mammary formula 2–2=8 perfectly distinctly. The shortness of the hind foot, almost as short as basilar length of skull, is noteworthy.

Rattus microbullatus, new species

TYPE.—No. 101108, Amer. Mus. Nat. Hist.; ♂, adult; Tanka Salocco, Mengkoka Range, southeastern Celebes; 1500 meters; January 4, 1932; collector, G. Heinrich. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—A member of the *xanthurus* group with dark pelage lacking much of the brownish shade of *salocco*, with under parts entirely gray-based, as in *taerae*, and skull with broad molars, short palatal openings and very small bullae (for the group).

DESCRIPTION.—General color dark gray sprinkled with ashy white, a slight tint of brownish appearing in the hair tips of the flanks. Guard hairs few, almost as short as general pelage. Ears in proportion the same as those of *dominator*. Face almost pure fuscous; vibrissae black. Under parts with hairs buffy tipped, their bases fuscous. Line of transition indistinct. Hands and feet, including toes, brownish fuscous. Basal half of tail fuscous, distal half whitish. Tail hairs only one scale length, at tip one and one-half to two scale lengths.

Skull with heavy rostrum, nasals backwardly pointed as in *dominator;* brain case rather full and broad; temporal ridges only moderately enlarged; interparietal small (4.5×9.5). Incisors wide and heavy, somewhat opisthodont; molars large and wide; palatal foramina only 30 per cent of palatilar length; and, further, bulla very reduced, only 95 per cent of length of palatal foramina.

MEASUREMENTS OF TYPE.—Head and body, 203 mm.; tail, 223; hind foot, 42.0; skull, occipitonasal length, 50.4; zygomatic breadth, 25.2; nasals, 19.8; interorbital breadth, 6.7; zygomatic plate, 5.3; diastema, 14.0; palatilar length, 23.3; palatal foramina, 7.0; length bulla, 6.6; length molar crowns, 9.0; length crown m^1, 4.1; breadth crown m^1, 2.9.

This species is based upon the type (♂) and a paratype (adult ♀), the mammary formula of which apparently is 1–2=6 (normal for the

group). There is also a juvenal female in poor condition. In that animal the general dark color of the pelage is intensified, and though all three molars are erupted, wear appears as far forward as the last lamina of m^1 only.

Rattus arcuatus, new species

TYPE.—No. 101111, Amer. Mus. Nat. Hist.; ♀, adult; Tanka Salocco, Mengkoka Range, southeastern Celebes, 1500 meters; January 11, 1932; collector, G. Heinrich. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—A *xanthurus* rat generally resembling *taerae* and *microbullatus* in exterior appearance and in its gray-based ventral fur, but differing in the strongly arched nature of the skull and long, slender muzzle.

DESCRIPTION.—Dark fuscous dorsal hairs flecked with grayish, a number of the hairs being black throughout (short guard hairs, probably); a lighter brownish-gray shade on sides and thighs; face much as body; a spot of white (individual) on the frons. Ventrally the hairs fuscous, with grayish white tips. Ears large as in *dominator*. Hands and feet with whitish hairs (not black as in *microbullatus*). Distal half of tail white. Tail hairs attaining one scale length, in both mesial and terminal parts of tail.

Skull slender, the muzzle long and slender; temporal ridges rather weak, lightly beaded; interparietal small (4×10); skull strongly arched or flexed at the level of the frontal-nasal suture. Zygomatic plate moderately broad, its anterior margin well in advance (about 3 mm.) of the notch; incisors narrow (each about 1.3 mm. across); palatal foramina quite narrow and slitlike, rather short (31–32 per cent of palatilar length); molars rather heavy; bulla fairly short, subequal in length to that of palatal foramina and only 76 per cent of length of molar series (crowns).

MEASUREMENTS OF TYPE.—Head and body, 203 mm.; tail, 245; hind foot, 43.5; skull, occipitonasal length, 50.0; zygomatic breadth, 21.7; nasals, 20.7; interorbital breadth, 6.7; zygomatic plate, 5.7; diastema, 12.5; palatilar length, 21.9; palatal foramina, 7.8; length bulla, 7.0; upper molar crowns, 9.3; length crown m^1, 4.7; width crown m^1, 2.6.

Arcuatus is founded upon a series of 3 males and 3 females, in addition to the type, all topotypical.

Pectoral mammae can be found in none of the four females, although two pairs of inguinal mammae are readily discerned, so we conclude that the formula for the species is 0–2=4.

Rattus aspinatus, new species

TYPE.—No. 101281, Amer. Mus. Nat. Hist.; ♀, quite young adult; Ile-Ile, northern Celebes; December 4, 1930; collector, G. Heinrich. The type is a skin and skull, the latter badly broken.

GENERAL CHARACTERS.—A member of the *whiteheadi* group of rats, namely, with tail shorter than body, with very small bullae and very short palatal foramina, and normally with spinous pelage. The pelage of the new form, however, is entirely spineless.

DESCRIPTION.—Color above very dark, fuscous, the extreme tips of the hairs near Mars brown; beneath, the hairs gray-based, with their tips dull buffy gray; the sides

have the hairs tipped with clay color, making the transition from dorsal to ventral color indistinct. Backs of hands and feet dark gray; fingers and toes flesh-colored. Ears quite small, fuscous. Tail fuscous above, pale below, the true colors marred by heavy applications of a preservative which makes them appear silvery white. Feet formed as in the *whiteheadi* group.

Skull of type with whole of occipital portion broken. Rostrum short, rather narrow; zygomatic plate narrow, its anterior edge nearly upright; anteroṛbital notch, seen from above, shallow; palatal foramina and bullae very short; back of palate level with back of m^2; teeth as in *whiteheadi*.

MEASUREMENTS OF TYPE.—Head and body, 98 mm.; tail, 93; hind foot, 26.5; skull, zygomatic breadth, 14+; interorbital breadth, 5.5; nasals, 9.1; interparietal, 3.9×8.4; zygomatic plate, 2.1; diastema, 6.5; palatilar length, 11.4; palatal foramina, 3.7×2; length bulla, 3.9; length molar crowns, 6.0; length crown m^1, 3.1; width crown m^1, 1.9.

The type and a single paratype (A.M. No. 101282, young ♂), differing in no way from the former, form the basis for differentiation of this apparently distinct species. We believe that these rats form the first record of any member of the *whiteheadi* group in Celebes.

Doubtless it will be found that adults of *aspinatus* will present a far less melanistic appearance than do the two young specimens before us. No skull has been found for the male paratype.